(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 30 June 2005 (30.06.2005)

PCT

(10) International Publication Number WO 2005/060283 A1

(51) International Patent Classification⁷: H04L 1/00

H04Q 7/22,

(21) International Application Number:

PCT/SE2003/002038

(22) International Filing Date:

19 December 2003 (19.12.2003)

(25) Filing Language:

English

(26) Publication Language:

English

- (71) Applicant (for all designated States except US): TELE-FONAKTIEBOLAGET LM ERICSSON (publ) [SE/SE]; S-164 83 Stockholm (SE).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): NYSTRÖM, Johan [SE/SE]; Kronobergsgatan 22, S-112 33 Stockholm (SE). FRENGER, Pål [SE/SE]; Lyckselevägen 33, S-162 67 VÄLLINGBY (SE).
- (74) Agent: MAGNUSSON, Monica; c/o Ericsson AB, Patent Unit Radio Networks, Torshamnsgatan 23, S-164 80 Stockholm (SE).

- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

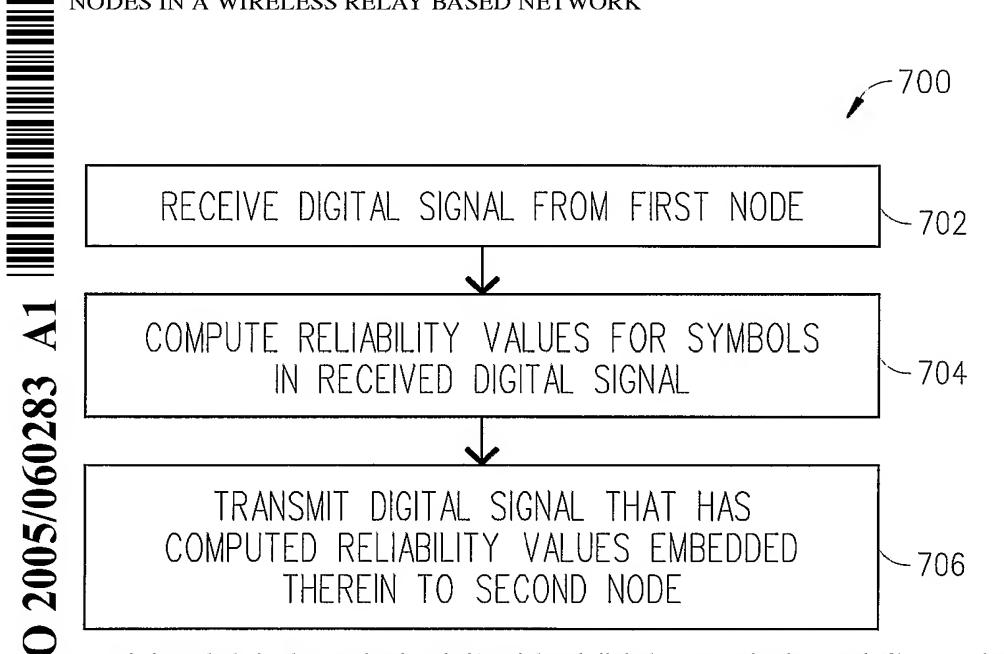
— of inventorship (Rule 4.17(iv)) for US only

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: RELAY STATION AND METHOD FOR ENABLING RELIABLE DIGITAL COMMUNICATIONS BETWEEN TWO NODES IN A WIRELESS RELAY BASED NETWORK



(57) Abstract: A relay station (606, 806a, 806b, 906a, 906b, 1006 and 1106) and a method described (700)are herein enables reliable digital that communications to occur between two nodes in a wireless relay based network (600, 800, 900, 1000 and 1100). The wireless relay based network includes a first node (602, 802, 902, 1002 and 1102) that transmits information coded/modulated digital in communications to a second node (604, 804, 904, 1004 and 1104) via one or more relay stations. And, each relay station is capable of: (1) receiving (702) a coded/modulated digital communication from the first node; (2) computing (704) a plurality of reliability values for a plurality of information symbols

or coded symbols in the received coded/modulated digital communication; and (3) transmitting (706) a coded/modulated digital communication that has the computed reliability values embedded therein to the second node.

